

REMARKS

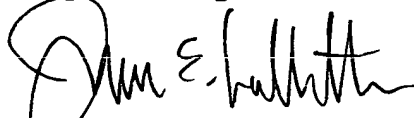
Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

This Amendment conforms certain terminology of claims 26, 28 and 34 to conform to that of claims 29, 51 and 74 of the parent USPN RE36445. Specifically, in each of these claims, the term "optical wave front correcting means" has been changed to "optical wave front transforming means."

In light of the foregoing and the response filed March 15, 2001, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone interview, the examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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Exhibit I- marked up version of the amended claims

26. (Amended) An optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information, by converging a light flux onto said second layer through said first layer of one of said N types of optical discs loaded in said apparatus said apparatus comprising:

a composite converging optical device comprising:

- (i) a light emitting means for emitting said light flux;
- (ii) a converging means for converging said light flux on said second layer of said one of said N optical discs loaded in said apparatus; and
- (iii) an optical wave front [correcting] transforming means disposed in an optical path connecting said light emitting means and said converging means for correcting an optical wave front of the light flux,

wherein said composite converging optical device (a) performs aberration correction in correspondence with said first layer of said loaded one of said N optical discs, and (b) converges said light flux as a smaller spot diameter D with

respect to one of said optical discs having a thinner one of said substrates onto said second layer of said loaded optical disc,

wherein said composite converging optical device differently corrects the optical wave front of the light flux in correspondence with said different thickness of said N optical discs to provide said aberration correction and said converging of said light flux, and

wherein a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less.

28. An optical recording/reproducing system comprising:

(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any selected one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said light layer being transparent and a second layer for storing information, by converging a light flux on said second layer through said first layer of one of said N types of optical discs loaded in said apparatus, said apparatus comprising:

a composite converging optical device, which comprises:

(i) a light emitting means for emitting said light flux;

(ii) a converging means for converging said light flux on said second layer of said loaded one of said N optical discs; and

(iii) an optical wave front [correcting] transforming means disposed in an optical path connecting said light emitting means and said converging means for correcting an optical wave front of the light flux;

a photo detecting means for detecting reflective light from said one of said N optical discs,

wherein said composite converging optical device (a) performs aberration correction in correspondence with said first layer of said loaded one of said N optical discs and (b) converges said light flux as a spot with a smaller diameter D with respect to one of said optical discs having a thinner one of said substrates onto said second layer of said loaded optical disc,

wherein said composite converging optical device differently corrects the optical wave front of the light flux in correspondence with said different thickness of said N optical discs to provide said aberration correction and said converging of said light flux, and

wherein a thickness of each of said transparent substrates of said N types of optical discs is about 1.2mm or less;

(b) a signal processing means, responsive to one of (i) a reproduction signal, corresponding to said information signal, from said photo detecting means and (ii) receipt of recording data, corresponding to said information signal, for recording on said disk, for generating an output signal corresponding to said information signal for performing one of a reproducing operation and a recording operation on said disks; and

(c) a system controlling means coupled to said signal processing means for controlling generation of the output signal of said signal processing means.

34. A system comprising:

(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any selected one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said light layer being transparent and a second layer for storing information, by converging a light flux on said second layer through said first layer of one of said N types of optical discs loaded in said apparatus, said apparatus comprising:

a composite converging optical device, which comprises:

(i) a light emitting means for emitting said light flux;

(ii) a converging means for converging said light flux on said second layer of said loaded one of said N optical discs; and

(iii) an optical wave front [correcting] transforming means disposed in an optical path connecting said light emitting means and said converging means for correcting an optical wave front of the light flux;

a photo detecting means for detecting reflective light from said one of said N optical discs,

wherein said composite converging optical device (a) performs aberration correction in correspondence with said first layer of said loaded one of said N optical discs and (b) converges said light flux as a spot with a smaller diameter D with respect to one of said optical discs having a thinner one of said substrates onto said second layer of said loaded optical disc,

wherein said composite converging optical device differently corrects the optical wave front of the light flux in correspondence with said different thickness of said N optical discs to provide said aberration correction and said converging of said light flux, and

wherein a thickness of each of said transparent substrates of said N types of optical discs is about 1.2mm or less;

(b) a signal processing apparatus including:

signal processing means, responsive to one of (i) a reproduction signal, corresponding to said information signal, from said photo detecting means and (ii) receipt of recording data, corresponding to said information signal, for recording on said disk, for generating an output signal corresponding to said information signal for performing one of a reproducing operation and a recording operation on said disks; and

system controlling means coupled to said signal processing means for controlling generation of the output signal of said signal processing means.